

UNITED STATES PATENT AND TRADEMARK OFFICE



APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO	
10/603,305	06/25/2003	Axel Thiess	RPG-1 (223400-4)	5274	
7	7590 08/16/2004		EXAM	INER	
OLSON & HIERL, LTD.			BERNATZ, KEVIN M		
36th Floor 20 North Wacker Drive		ART UNIT	PAPER NUMBER		
Chicago, IL	60606		1773		
			DATE MAILED: 08/16/200-	DATE MAILED: 08/16/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)					
Office Action Summary		10/603,305	THIESS ET AL.	THIESS ET AL.				
		Examiner	Art Unit					
		Kevin M Bernatz	1773					
The MAILING DATE of this communication appears on the cover sheet with the correspondence address Period for Reply								
A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION. - Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication. - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely. - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication. - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).								
Status								
1)	1) Responsive to communication(s) filed on							
	This action is FINAL . 2b) This action is non-final.							
3)[Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i> , 1935 C.D. 11, 453 O.G. 213.							
Dispositi	on of Claims							
4)⊠	4)⊠ Claim(s) <u>1-35</u> is/are pending in the application.							
	4a) Of the above claim(s) is/are withdrawn from consideration.							
	5) Claim(s) is/are allowed.							
6)⊠)⊠ Claim(s) <u>1-35</u> is/are rejected.							
7) 🛛	☑ Claim(s) <u>2,21 and 27</u> is/are objected to.							
8)□	8) Claim(s) are subject to restriction and/or election requirement.							
Applicati	on Papers							
9)[The specification is objected to by the Examine	٠.						
10) The drawing(s) filed on is/are: a) accepted or b) objected to by the Examiner.								
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).								
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).								
11)[<	The oath or declaration is objected to by the Ex	aminer. Note the attached Office	e Action or form PT	O-152.				
Priority ι	ınder 35 U.S.C. § 119							
12)	Acknowledgment is made of a claim for foreign	priority under 35 U.S.C. § 119(a	a)-(d) or (f).					
a) ☐ All b) ☐ Some * c) ☐ None of:								
1. Certified copies of the priority documents have been received.								
	2. Certified copies of the priority documents	have been received in Applica	tion No					
	3. Copies of the certified copies of the prior	ity documents have been receiv	ed in this National	Stage				
	application from the International Bureau	• • •						
* 5	See the attached detailed Office action for a list	of the certified copies not receiv	ed.					
Attachmen	t(s)							
1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413)								
2) Notic	e of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail D	Date					
	nation Disclosure Statement(s) (PTO-1449 or PTO/SB/08) r No(s)/Mail Date <u>9/29/2003</u> .	5) Notice of Informal 6) Other:	Patent Application (PTC)-152)				

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DETAILED ACTION

Oath/Declaration

- 1. The presently filed application contains two distinct Oaths, which is not permitted. Specifically, both applicants have filed oaths indicating them as the sole and first inventor of the present application, when it appears that both inventors are co-inventors of the claimed subject matter. Specifically, while applicants are not required to sign on the same copy of the declaration, both applicants must sign *identical* copies of the declaration (i.e. even the listed order of the inventors must be the same).
- 2. The present filed Oath is improper since it must contain the full name of all inventors. "A.K" is not a proper full name and at least the full first name of "A" Wong must be used.

Claim Objections

- 3. Claim 2 is objected to because of the following informalities: delete the extra space between "by" and "dry weight". Appropriate correction is required.
- 4. Claim 21 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. The independent claim already requires the polymeric material to comprise rubber.

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5. Claim 27 is objected to because of the following informalities: insert "surface" between "inner" and that". Appropriate correction is required.

Claim Rejections - 35 USC § 112

- 6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

 The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
- 7. Claims 7, 25 and 29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 7 recites the limitation "the water-soluble cellulose either". There is insufficient antecedent basis for this limitation in the claim since the base claim does not recite a water-soluble cellulose either. For purposes of evaluating the prior art, the Examiner has interpreted this claim as if it depended from claim 6, i.e. the cellulose either must be both water-soluble and methylcellulose.

Claim 25 recites the language "greater than about 10 to 11" which is not definite and does not provide one of ordinary skill with a reasonable appraisal of the claimed subject matter. For purposes of evaluating the prior art, the Examiner has given the term(s) the broadest reasonable interpretation(s) consistent with the written description in applicants' specification as it would be interpreted by one of ordinary skill in the art. *In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); *In re Donaldson Co., Inc.*, 16 F.3d 1190, 1192-95, 29 USPQ2d 1845, 1848-50 (Fed. Cir.

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1994). See MPEP 2111. Specifically, the Examiner has interpreted the phrase to read: "greater than about 10".

The term "super" in claim 29 is a relative term which renders the claim indefinite. The term "super surfactant" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. For purposes of evaluating the prior art, the Examiner has interpreted this limitation as merely requiring a cationic surfactant.

Claim Rejections - 35 USC § 103

- 8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
 - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.
- 9. Claims 1-8, 20-25, 27 and 29-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiess et al. (EP 1-223-189 A1) in view of Li et al. (U.S. Patent App. No. 2002/0155310 A1).

Regarding claims 1 and 21, Thiess et al. disclose a radiation protection material for use in radiation protection gloves comprising at least one layer of a polymeric material of rubber having radiation absorbing particles distributed therein, the radiation absorbing particles attenuating the intensity of scattered radiation (*Paragraphs 0001*, 0007 and 0019).

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Thiess et al. fail to disclose including a cellulose derivative in the layer of polymeric material.

However, Li et al. teach that using cellulosing derivatives when forming latex articles allows for control of the viscosity of the composition for ease of use and manufacturing (*Paragraph 0027*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Thiess et al. to use a cellulose derivative as taught by Li et al. to control the viscosity of the composition for ease of use and manufacturing, especially since Thiess et al. recognizes the importance of optimizing the viscosity to proper ranges (*Thiess et al., Paragraph 0014*).

Regarding claims 2, 4 and 8, Thiess et al. disclose composition amounts meeting applicants' claimed weight percents (*Paragraphs 0008 and 0009 and examples*).

Regarding claims 3 and 5 - 7, Li et al. disclose both weight percents and water-soluble (i.e. methylcellulose) cellulose ethers meeting applicants' claimed material and weight percent limitations (*Paragraph 0027*).

Regarding claim 20, the limitation(s) "formed by dipping" and "vulcanizing the material on the pattern" are process limitation(s) and is/are not further limiting in terms of the structure resulting from the claimed process. Specifically, in a product claim, as long as the prior art product meets the claimed structural limitations, the method by which the product is formed is not germane to the determination of patentability of the product unless an unobvious difference can be shown to result from the claimed process limitations. In the instant case, Thiess et al. disclose the same dipping process

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(Paragraph 0019) and curing the rubber (Paragraph 0021) which is deemed to produce a structure that is equivalent to a structure produced by vulcanization.

Regarding claims 22 – 25, Li et al. teach using rubbers meeting applicants' claimed Markush limitations (*Paragraph 0016*) as equivalents to natural rubber. Claims 23 - 25 recite additional limitations pertaining to a specific Markush element (e.g. claims 23 - 25 depends from claim 22, which recites the Markush group "wherein the rubber material is selected from the group consisting of polyisoprene rubber ... urethane rubber"). However, the above noted claims do not positively recite that the specific element must be selected, and therefore, the limitations in the dependent claims are <u>not</u> required <u>unless the specific Markush element is included</u>. Applicant(s) are suggested to reword claim 23 to positively recite the selection of the specific Markush group <u>element</u> first, and then further limit said element (e.g. "wherein the rubber is polyisoprene and the polyisoprene is comprised of a natural rubber latex"). However, the Examiner notes that Li et al. teach using natural rubber latex (*Paragraph 0016*).

Regarding claim 27, Li et al. teach using at least one layer of a polymer coating on an inner surface that reduces a surface friction of the inner surface of the radiation protection material with respect to hands (*Paragraphs 0014 and 0015*).

Regarding claim 29, Li et al. teach the use of surfactants meeting applicants' claimed limitations inorder to provide a powder-free glove with good stripability and good donnability (*Paragraphs 0015, 0022 – 0023, and 0056*).

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Regarding claims 30 – 32, Li et al. teach using a layer of polymer coating on an outer surface that reduces a stickiness of the surface, reduces surface drag (i.e. reduces friction) and comprises polyacrylate (*Paragraphs 0014, 0015 and 0018*).

Regarding claims 33 – 35, Thiess et al. disclose particles meeting applicants' claimed size limitations (*Paragraph 0010*).

10. Claims 9, 20 and 26 rejected under 35 U.S.C. 103(a) as being unpatentable over Thiess et al. in view of Li et al. as applied above, and further in view of Sandbank et al. (WO 93/02457).

Thiess et al. and Li et al. are relied upon as described above.

Regarding claim 9, neither of the above disclose radiation absorbing particles comprising 100% of tungsten oxide particles.

However, the Examiner deems that bismuth oxide and tungsten oxide are known equivalents in terms of radiation absorbing particles, as shown by the same use in Sandbank et al. (*Pages 6, 8 and 9*) and Thiess et al. (*Paragraph 0005*).

Substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. In the instant case, bismuth oxides and tungsten oxides are equivalents in the field of radiation absorbing particles. *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. v. Linde Air Products Co.* 85 USPQ 328 (USSC 1950).

Regarding claim 20, while Thiess et al. disclose curing the rubber layer which is deemed equivalent to vulcanizing in that a similar structure results, the Examiner further

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notes that Sandbank et al. provides an explicit teaching that curing or cross-linking (i.e. vulcanization) is known to be equivalent methods of forming tougher glove layers (pages 11 and 12).

Regarding claim 26, Sandbank et al. teach that gloves with multiple layers can be formed if a thicker overall radiation protection film is desired (*pages 8, 11, 12 and 14*).

11. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiess et al. in view of Li et al. as applied above, and further in view of Lange (U.S. Patent No. 6,548,570 B1).

Thiess et al. and Li et al. are relied upon as described above.

Neither of the above disclose using 100% tin oxide or antimony-tin oxide particles.

However, the Examiner deems that bismuth oxides, tin oxides and antimony-tin oxides are known equivalents in terms of materials possessing radiation absorbing properties, as taught by Lange ($col.\ 2$, lines 17-23) for polymer materials with radiation shield properties ($col.\ 1$, lines 6-8).

Substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. In the instant case, inorganic components formed from bismuth, tin and antimony are all known equivalents in the field of radiation absorbing particles. *In re Fount* 213 USPQ 532 (CCPA 1982); *In re Siebentritt* 152 USPQ 618 (CCPA 1967); *Graver Tank & Mfg. Co. Inc. v. Linde Air Products Co.* 85 USPQ 328 (USSC 1950).

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12. Claims 12 – 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thiess et al. in view of Li et al. as applied above, and further in view of MacLeod et al. (EP 371699 A1).

Thiess et al. and Li et al. are relied upon as described above.

Neither of the above disclose using a mixture of particles for the radiation absorbing layer.

However, MacLeod et al. teach that it is known in the art to use a mixture of inorganic compounds capable of absorbing radiation (page 3, lines 26 - 30 and lines 44 - 53) inorder "to control not only the amount of radiation that is attenuated but also the shape of the spectrum of the radiation that is transmitted through the material" (page 3, lines 44 - 53 and page 5, lines 37 - 58). The Examiner notes that MacLeod et al. disclose using materials meeting applicants' claimed compositions as suitable radiation absorbing particles (page 3, lines 44 - 53 and page 5, lines 1 - 11).

Therefore, the Examiner deems that it would have been obvious to one having ordinary skill in the art to determine an amount and type of the at least 2 radiation absorbing particles meeting applicants' claimed composition and weight percent limitations by optimizing the radiation absorbing properties of the mixture through routine experimentation given the teaching in MacLeod et al. regarding the desire to use mixtures of materials "to control not only the amount of radiation that is attenuated but also the shape of the spectrum of the radiation that is transmitted through the material". *In re Boesch*, 205 USPQ 215 (CCPA 1980); *In re Geisler*, 116 F. 3d 1465, 43 USPQ2d

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1362, 1365 (Fed. Cir. 1997); *In re Aller*, 220 F.2d, 454, 456, 105 USPQ 233, 235 (CCPA 1955).

13. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thiess et al. in view of Li et al. as applied above, and further in view of Koide et al. (U.S. Patent App. No. 2002/0101007 A1).

Thiess et al. and Li et al. are relied upon as described above.

Neither of the above disclose a polymer coating to reduce friction meeting applicants' claimed material limitations.

However, Koide et al. teach that coating the surface of a latex article with a compound meeting applicants' claimed material limitations can make the surface of the latex non-adherent (i.e. reduce a surface friction of the inner surface of the material with respect to hands") (*Paragraphs 0134, 0135 and 0157*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Thiess et al. in view of Li et al. to use a polymer coating meeting applicants' claimed structural and material limitations as taught by Koide et la. inorder to make the surface of the latex non-adherent.

14. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandbank et al. (WO '457) in view of Li et al. ('310 A1).

Regarding claim 1, Sandbank et al. disclose a radiation protection material for use in radiation protection gloves comprising at least one layer of a polymeric material

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of rubber having radiation absorbing particles distributed therein, the radiation absorbing particles attenuating the intensity of scattered radiation (page 3).

Sandbank et al. fail to disclose including a cellulose derivative in the layer of polymeric material.

However, Li et al. teach that using cellulosing derivatives when forming latex articles allows for control of the viscosity of the composition for ease of use and manufacturing (*Paragraph 0027*).

It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sandbank et al. to use a cellulose derivative as taught by Li et al. to control the viscosity of the composition for ease of use and manufacturing.

15. Claims 2 – 27 and 29 – 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sandbank et al. in view of Li et al. as applied above, and further in view of MacLeod et al. (EP '699 A1).

Sandbank et al. and Li et al. are relied upon as described above.

Regarding claims 2, 4, 8 and 21, while Sandbank et al. disclose volume amounts of the radiation particles (*page 6*), Sandbank et al. fail to disclose dry weight percents.

However, MacLeod et al. teach that the weight percent of the radiation absorbing particles can be controlled to be within the range of "about 70 – 93% by weight" (*Abstract*) and the Examiner has taken the position that "about 70" reads on applicants' claimed "about 67%" since applicants' have not provided sufficient specificity as to what

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range is encompassed by the word "about". Furthermore, the Examiner notes that MacLeod et al. teach that the weight percent of the particle is directly related to the degree of radiation absorption desired (page 5, lines 37 – 50)). The Examiner deems that it would have been obvious to one having ordinary skill in the art to have determined the optimum value of a results effective variable such as the amount of radiation absorbing particles used in the polymer coating through routine experimentation, especially given the teaching in both Sandbank et al. (page 6) and MacLeod et al.(cited above) regarding the desire to optimize the radiation absorbing properties of the polymer composite for specific applications.

Regarding claims 3 and 5 - 7, Li et al. disclose both weight percents and water-soluble (i.e. methylcellulose) cellulose ethers meeting applicants' claimed material and weight percent limitations (*Paragraph 0027*).

Regarding claim 8, the Examiner deems that bismuth oxide and tungsten oxide are known equivalents in terms of radiation absorbing particles, as taught by MacLeod et al. (page 3, lines 44 - 53 and page 5, lines 1 - 11). While MacLeod et al. teach using multiple particles for a wider range of absorption, the Examiner notes that one of ordinary skill in the art would clearly recognize that the invention of Sandbank et al. (i.e. using only a single type of particle) would still be suitable if a narrow range of radiation absorption was required and/or to avoid extra costs incurred with utilizing multiple types of raw materials. Substitution of equivalents requires no express motivation as long as the prior art recognizes the equivalency. In the instant case, bismuth oxide and

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tungsten oxide are equivalents in the field of radiation absorbing particles as shown above.

Regarding claim 9, Sandbank et al. teach tungsten oxide particles (page 8).

Regarding claims 10 and 11, MacLeod et al. teach that not only are tin and antimony oxide particles known equivalent radiation absorbing particles to tungsten oxide, but both tin and antimony (and hence antimony-tin oxides) provide the further benefit of being added "to rubber lattices to promote, catalyse or stabilize reactions, e.g. cross-linking or vulcanization of the rubber" (page 3, lines 8 - 15). It would therefore have been obvious to use tin oxide or antimony-tin oxide since such materials are known equivalent radiation absorbing materials and also, when used with rubber lattices, "promote, catalyse or stabilize reactions, e.g. cross-linking or vulcanization of the rubber".

Regarding claims 12 - 19, MacLeod et al. teach that it is known in the art to use a mixture of inorganic compounds capable of absorbing radiation (page 3, lines 26 - 30 and lines 44 - 53) inorder "to control not only the amount of radiation that is attenuated but also the shape of the spectrum of the radiation that is transmitted through the material" (page 3, lines 44 - 53 and page 5, lines 37 - 58). The Examiner notes that MacLeod et al. disclose using materials meeting applicants' claimed compositions as suitable radiation absorbing particles (page 3, lines 44 - 53 and page 5, lines 1 - 11).

Therefore, the Examiner deems that it would have been obvious to one having ordinary skill in the art to determine an amount and type of the at least 2 radiation absorbing particles meeting applicants' claimed composition and weight percent

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limitations by optimizing the radiation absorbing properties of the mixture through routine experimentation given the teaching in MacLeod et al. regarding the desire to use mixtures of materials "to control not only the amount of radiation that is attenuated but also the shape of the spectrum of the radiation that is transmitted through the material".

Regarding claim 20, Sandbank et al. teach dipping and vulcanizing the rubber material (pages 11, 12 and 16).

Regarding claims 22 – 25, Sandbank et al. teach using rubbers meeting applicants' claimed Markush limitations (*page 10*). Claims 23 - 25 recite additional limitations pertaining to a specific Markush element (e.g. claims 23 - 25 depends from claim 22, which recites the Markush group "wherein the rubber material is selected from the group consisting of polyisoprene rubber ... urethane rubber"). However, the above noted claims do not positively recite that the specific element must be selected, and therefore, the limitations in the dependent claims are <u>not</u> required <u>unless the specific Markush element is included</u>. Applicant(s) are suggested to reword claim 23 to positively recite the selection of the specific Markush group <u>element</u> first, and then further limit said element (e.g. "wherein the rubber is polyisoprene and the polyisoprene is comprised of a natural rubber latex"). However, the Examiner notes that both Sandbank et al. (*page 10*) and Li et al. teach using natural rubber latex (*Paragraph 0016*).

Regarding claim 26, Sandbank et al. teach that gloves with multiple layers can be formed if a thicker overall radiation protection film is desired (pages 8, 11, 12 and 14).

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Regarding claim 27, Li et al. teach using at least one layer of a polymer coating on an inner surface that reduces a surface friction of the inner surface of the radiation protection material with respect to hands (*Paragraphs 0014 and 0015*).

Regarding claim 29, Li et al. teach the use of surfactants meeting applicants' claimed limitations inorder to provide a powder-free glove with good stripability and good donnability (*Paragraphs 0015, 0022 – 0023, and 0056*).

Regarding claims 30 – 32, Li et al. teach using a layer of polymer coating on an outer surface that reduces a stickiness of the surface, reduces surface drag (i.e. reduces friction) and comprises polyacrylate (*Paragraphs 0014, 0015 and 0018*).

Regarding claims 33 - 35, Sandbank et al. disclose particles meeting applicants' claimed size limitations (page 9).

16. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sandbank et al. in view of Li et al. and MacLeod et al. as applied above, and further in view of Koide et al. ('007 A1).

Sandbank et al., Li et al. and MacLeod et al. are relied upon as described above.

None of the above disclose a polymer coating to reduce friction meeting applicants' claimed material limitations.

However, Koide et al. teach that coating the surface of a latex article with a compound meeting applicants' claimed material limitations can make the surface of the latex non-adherent (i.e. reduce a surface friction of the inner surface of the material with respect to hands") (*Paragraphs 0134, 0135 and 0157*).

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It would therefore have been obvious to one of ordinary skill in the art at the time of the applicant's invention to modify the device of Sandbank et al. in view of Li et al. and MacLeod et al. to use a polymer coating meeting applicants' claimed structural and material limitations as taught by Koide et la. inorder to make the surface of the latex non-adherent.

Conclusion

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M Bernatz whose telephone number is (571) 272-1505. The examiner can normally be reached on M-F, 9:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Bernatz, PhD

Primary Examiner

August 11, 2004